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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MELLON, DAVID C	
ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,560	LESCOCHE, PHILIPPE	
	Examiner	Art Unit	
	DAVID C. MELLON	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-17* is/are pending in the application.

4a) Of the above claim(s) *10-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20091204*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/4/2009 has been entered.

Claim Interpretation

2. With regards to the claims, it is noted that there are multiple possible claim interpretations. Accordingly, there are multiple rejections made in light of the different interpretations discussed in this section. Specifically, it is noted by the Examiner that Applicant has specified in claim 1 an “inner surface” of the porous support. However, Applicant has not defined the inner surface with respect to the flow channel or the separator layer. Accordingly, the Examiner is interpreting "inner surface" both broadly (e.g. it is any surface) and narrowly (e.g. it is the surface on which the fluid first contacts during tangential filtration. Additionally, with regards to claim 3 Applicant has not defined inner and outer surfaces of the support. Accordingly with respect to claim 3, the terms will be treated as discussed above for inner surface.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Garcera et al. (USP 6,375,014).

Regarding claim 1, Garcera et al. discloses a membrane with an increasing mean porosity in the direction of flow (Abstract) in figure 1 comprising:

- A porous support (1), delimiting at least one flow channel for fluid to be treated (2) flowing in a given direction between an inlet and an outlet (see in figure 1 arrows indicating direction of flow)

- Having variable partial-pore filling (C5/L50-65 – impregnation) on a portion of the support of a constant thickness creating a mean porosity gradient in the direction of the flow of fluid (Abstract, see section 3 in figure 1, "region impregnated", C4/L35-41), the minimum porosity being located at the inlet and the maximum porosity at the outlet (C4/L23-35 – see also figure 1, decreasing amount of impregnation from inlet to outlet)
- Partial pore filling using inorganic particles (C6/L15-30 - ceramic particles)
- A separation or filtering layer (C2/L55-60, C1/L1-25, C4/L1-10).

With regards to the partial pore filling on the inner surface, it has been interpreted that the inner surface corresponds to the surface from which pore filling of Garcera begins.

Regarding claim 2, modified Garcera et al. discloses all of the claim limitations as set forth above. Furthermore, Garcera et al. inherently discloses a flux density gradient per unit of pressure with the minimum flux at the inlet and the maximum at the outlet since the porosity is lowest at the inlet and highest at the outlet.

Regarding claim 3, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. further discloses that the mean porosity of the support increases inside the support in a transverse direction to the direction of the flow of fluid between the inside surface and the outer surface (see figure 1 of Garcera et al.). Wherein the outer surface has been defined to mean the flow contacting surface of Garcera.

Regarding claim 4, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. further discloses that the variable partial-pore filling is made over

a depth from the inner surface which decreases in the direction of flow (see figure 1 in Garcera et al.)

Regarding claim 6, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al further discloses that the partial pore-filling is obtained by penetration of the support with inorganic particles whose mean diameter is smaller than the mean pore diameter of the support (C6/L15-20 - 0.1-4 micron particles, C8/L10-21 - 12 micrometer initial pore diameter, C6/L5-10 - "inorganic" impregnation material).

Regarding claim 7, modified Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. further discloses that the penetration of inorganic particles is followed by sintering (C5/L64-C6/L5).

Regarding claim 8, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. further discloses a mean porosity which increases in a substantially continuous manner in the direction of the flow of fluid to be treated to obtain a substantially constant permeate flow along the flow channel (see figure 1 of Garcera et al., C5/L30--52).

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garcera et al. (USP 6,375,014), in view of Grangeon et al. (USP 6,499,606) with French foreign priority date of 8/4/1999.

Regarding claim 9, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. does not explicitly disclose the use of mean porosity plateaus in the direction of flow, with the length of the plateaus being substantially identical.

Grangeon et al. discloses a cross-flow filter membrane (title) comprising a porous support and a separator layer (abstract) in figures 1-3. The membrane has an inorganic porous support (2) with a separator layer (4). Grangeon et al. in figure 3 discloses a thickness gradient in the separator layer that diminishes in steps P in the flow direction of the fluid to be treated (C4/L35-45) which are of substantially the same length.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the mean porosity gradient of Garcera et al. such that it is stepwise using plateaus as taught by the separator layer of Grangeon et al. for the purpose of having areas of known mean porosity at constant levels rather than potentially variable continuous zones.

8. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garcera et al. (UPS 6,375,014) and in view of Neumann et al. (WO 02/062450), see US 2004/0050773 as English language equivalent.

Regarding claim 1, Garcera et al. discloses a membrane with an increasing mean porosity in the direction of flow (Abstract) in figure 1 comprising:

- A porous support (1), delimiting at least one flow channel for fluid to be treated (2) flowing in a given direction between an inlet and an outlet (see in figure 1 arrows indicating direction of flow)
- Having variable partial-pore filling (C5/L50-65 – impregnation) on a portion of the support of a constant thickness creating a mean porosity gradient in the direction of the flow of fluid (Abstract, see section 3 in figure 1, “region impregnated”, C4/L35-41), the minimum porosity being located at the inlet

and the maximum porosity at the outlet (C4/L23-35 – see also figure 1, decreasing amount of impregnation from inlet to outlet)

- Partial pore filling using inorganic particles (C6/L15-30 - ceramic particles)
- A separating layer (C2/L55-60, C1/L1-25, C4/L1-10)

Garcera et al. does not explicitly disclose that the partial-pore filling is such that the partial-pore filling extends from the inner surface (first flow contacting portion as alternately interpreted - see above) of the porous support.

Neumann discloses a filter with graduated structure (Abstract) in the figure wherein with a first separation layer sintered to a second supporting layer and wherein there is penetration of the first layer into the second layer ([0007] and claim 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the filter unit of Garcera by replacing the filtering layer and swapping the pore filling to be on the channel side so as to utilize the single sintering process of Neumann to produce a sintered filter with partial pore filling that also has a separation layer for the purpose of simplifying manufacture and reducing needed production steps. Accordingly, one of skill in the art would maintain the partial pore filling of Garcera but merely flip it so that it is from the channel side.

Regarding claim 2, modified Garcera et al. discloses all of the claim limitations as set forth above. Furthermore, Garcera et al. inherently discloses a flux density gradient per unit of pressure with the minimum flux at the inlet and the maximum at the outlet since the porosity is lowest at the inlet and highest at the outlet.

Regarding claim 3, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. further discloses that the mean porosity of the support increases inside the support in a transverse direction to the direction of the flow of fluid between the inside surface and the outer surface (see figure 1 of Garcera et al.). Wherein the outer surface has been defined to mean the flow contacting surface of Garcera.

Regarding claim 4, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. further discloses that the variable partial-pore filling is made over a depth from the inner surface which decreases in the direction of flow (see figure 1 in Garcera et al.)

Regarding claim 6, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al further discloses that the partial pore-filling is obtained by penetration of the support with inorganic particles whose mean diameter is smaller than the mean pore diameter of the support (C6/L15-20 - 0.1-4 micron particles, C8/L10-21 - 12 micrometer initial pore diameter, C6/L5-10 - "inorganic" impregnation material).

Regarding claim 7, modified Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. further discloses that the penetration of inorganic particles is followed by sintering (C5/L64-C6/L5).

Regarding claim 8, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. further discloses a mean porosity which increases in a substantially continuous manner in the direction of the flow of fluid to be treated to obtain a substantially constant permeate flow along the flow channel (see figure 1 of Garcera et al., C5/L30--52).

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garcera et al. (USP 6,375,014), in view of Neumann et al. (WO 02/062450), see US 2004/0050773 as English language equivalent, and in view of Grangeon et al. (USP 6,499,606) with French foreign priority date of 8/4/1999.

Regarding claim 9, Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. does not explicitly disclose the use of mean porosity plateaus in the direction of flow, with the length of the plateaus being substantially identical.

Grangeon et al. discloses a cross-flow filter membrane (title) comprising a porous support and a separator layer (abstract) in figures 1-3. The membrane has an inorganic porous support (2) with a separator layer (4). Grangeon et al. in figure 3 discloses a thickness gradient in the separator layer that diminishes in steps P in the flow direction of the fluid to be treated (C4/L35-45) which are of substantially the same length.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the mean porosity gradient of Garcera et al. such that it is stepwise using plateaus as taught by the separator layer of Grangeon et al. for the purpose of having areas of known mean porosity at constant levels rather than potentially variable continuous zones.

10. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garcera et al. (USP 6,375,014), in view of Childs et al. (USP 7,247,370), initial publication 1/30/2003 as WO 03/008078 with effective filing date 7/20/2001 from US Provisional 60/306412.

Regarding claim 1, Garcera et al. discloses a membrane with an increasing mean porosity in the direction of flow (Abstract) in figure 1 comprising:

- A porous support (1), delimiting at least one flow channel for fluid to be treated (2) flowing in a given direction between an inlet and an outlet (see in figure 1 arrows indicating direction of flow)
- Having variable partial-pore filling (C5/L50-65 – impregnation) on a portion of the support of a constant thickness creating a mean porosity gradient in the direction of the flow of fluid (Abstract, see section 3 in figure 1, "region impregnated", C4/L35-41), the minimum porosity being located at the inlet and the maximum porosity at the outlet (C4/L23-35 – see also figure 1, decreasing amount of impregnation from inlet to outlet)
- Partial pore filling using inorganic particles (C6/L15-30 - ceramic particles)
- A separating layer (C2/L55-60, C1/L1-25, C4/L1-10)

Garcera et al. does not explicitly disclose that the partial-pore filling is such that the partial-pore filling extends from the inner surface of the porous support.

Childs et al. discloses asymmetric membranes composed of a microporous substrate whose pores contain a cross-linked gel being greater at or adjacent to a surface of the membrane (Abstract) in figure 5, specifically the instance pictured on the left in figure 5. Childs et al. discloses that the pore filling gel can be placed in a configuration such that the porous support filled with the gel asymmetrically is facing the fluid flowing rather than being on the outside away from the flow of fluid (see figure 5 on the left and C8/L10-40).

Garcera et al. and Childs et al. are combinable because they are concerned with the same field of endeavor, namely that of pore filling of porous membrane supports.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the partial-pore filled membrane structure of Garcera et al. by making it such that the partial-pore filling occurs from the inside of the membrane to the outside as taught by Childs et al. for the purpose of decreasing the amount of fouling experienced by the membrane during operation as well as to provide additional separation capability by having reduced pore size immediately after the separation layer.

Regarding claim 2, modified Garcera et al. discloses all of the claim limitations as set forth above. Furthermore, modified Garcera et al. inherently discloses a flux density gradient per unit of pressure with the minimum flux at the inlet and the maximum at the outlet since the porosity is lowest at the inlet and highest at the outlet.

Regarding claim 3, modified Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. as modified by Childs et al. further discloses that the mean porosity of the support increases inside the support in a transverse direction to the direction of the flow of fluid between the inside surface and the outer surface (see figure 1 of Garcera et al. and further figure 5 of Childs et al.).

Regarding claim 4, modified Garcera et al. discloses all of the claim limitations as set forth above. Modified Garcera et al. further discloses that the variable partial-pore filling is made over a depth from the inner surface which decreases in the direction of flow (see figure 1 in Garcera et al. along with figure 5 of Childs et al., combined as such

to create the partial-pore filling from the inside to the outside and a decreasing penetration depth in the direction of the fluid flow).

Regarding claim 6, modified Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al further discloses that the partial pore-filling is obtained by penetration of the support with inorganic particles whose mean diameter is smaller than the mean pore diameter of the support (C6/L15-20 - 0.1-4 micron particles, C8/L10-21 - 12 micrometer initial pore diameter, C6/L5-10 - "inorganic" impregnation material).

Regarding claim 7, modified Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. further discloses that the penetration of inorganic particles is followed by sintering (C5/L64-C6/L5).

Regarding claim 8, modified Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. as modified by Childs et al. further discloses a mean porosity which increases in a substantially continuous manner in the direction of the flow of fluid to be treated to obtain a substantially constant permeate flow along the flow channel (see figure 1 of Garcera et al., C5/L30--52).

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garcera et al. (USP 6,375,014), in view of Childs et al. (USP 7,247,370), initial publication 1/30/2003 as WO 03/008078 with effective filing date 7/20/2001 from US Provisional 60/306412, and further in view of Grangeon et al. (USP 6,499,606) with French foreign priority date of 8/4/1999.

Regarding claim 9, modified Garcera et al. discloses all of the claim limitations as set forth above. Garcera et al. does not explicitly disclose the use of mean porosity

plateaus in the direction of flow, with the length of the plateaus being substantially identical.

Grangeon et al. discloses a cross-flow filter membrane (title) comprising a porous support and a separator layer (abstract) in figures 1-3. The membrane has an inorganic porous support (2) with a separator layer (4). Grangeon et al. in figure 3 discloses a thickness gradient in the separator layer that diminishes in steps P in the flow direction of the fluid to be treated (C4/L35-45) which are of substantially the same length.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the mean porosity gradient of Garcera et al. such that it is stepwise using plateaus as taught by the separator layer of Grangeon et al. for the purpose of having areas of known mean porosity at constant levels rather than potentially variable continuous zones.

12. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garcera et al. (USP 6,375,014), in view of Childs et al. (USP 7,247,370), initial publication 1/30/2003 as WO 03/008078 with effective filing date 7/20/2001 from US Provisional 60/306412, and further in view of Pirbazari et al. (USP 5,505,841).

Regarding claim 1, Garcera et al. discloses a membrane with an increasing mean porosity in the direction of flow (Abstract) in figure 1 comprising:

- A porous support (1), delimiting at least one flow channel for fluid to be treated (2) flowing in a given direction between an inlet and an outlet (see in figure 1 arrows indicating direction of flow)

- Having variable partial-pore filling (C5/L50-65 – impregnation) on a portion of the support of a constant thickness creating a mean porosity gradient in the direction of the flow of fluid (Abstract, see section 3 in figure 1, "region impregnated", C4/L35-41), the minimum porosity being located at the inlet and the maximum porosity at the outlet (C4/L23-35 – see also figure 1, decreasing amount of impregnation from inlet to outlet)
- Partial pore filling using inorganic particles (C6/L15-30 - ceramic particles).

Garcera et al. does not explicitly disclose that the channel is coated with at least one separator layer or that the partial-pore filling is such that the partial-pore filling extends from the inner surface of the porous support.

Childs et al. discloses asymmetric membranes composed of a microporous substrate whose pores contain a cross-linked gel being greater at or adjacent to a surface of the membrane (Abstract) in figure 5, specifically the instance pictured on the left in figure 5. Childs et al. discloses that the pore filling gel can be placed in a configuration such that the porous support filled with the gel asymmetrically is facing the fluid flowing rather than being on the outside away from the flow of fluid (see figure 5 on the left and C8/L10-40).

Garcera et al. and Childs et al. are combinable because they are concerned with the same field of endeavor, namely that of pore filling of porous membrane supports.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the partial-pore filled membrane structure of Garcera et al. by making it such that the partial-pore filling occurs from the inside of the membrane to the

outside as taught by Childs et al. for the purpose of decreasing the amount of fouling experienced by the membrane during operation as well as to provide additional separation capability by having reduced pore size immediately after the separation layer.

Pirbazari et al. discloses a microfiltration membrane (C2/L45-55) in figure 1 comprising a microfilter membrane on a membrane support.

Garcera et al. and Pirbazari et al. are combinable because they are concerned with the same field of endeavor, namely that of membranes using porous supports.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the porous support membrane of Garcera et al. to include the use of a microfiltration membrane on a membrane support as taught by Pirbazari et al. for the purpose of improving the separation achieved by including a pre-filter component to the membrane.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1, 3-4, and 6-9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5-6, 9-14 of copending Application No. 11/587048. Although the conflicting claims are not identical, they are not patentably distinct from each other because the both are drawn to a porosity gradient porous support membrane with a separation layer in which the porosity gradient is formed by partial pore filling or clogging. Further, the mean porosity is disclosed as decreasing both longitudinally and transversely with fluid flow and the membrane is disclosed as having a central channel or channels.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Amendment

15. The Declaration of Grangeon Andre under 37 CFR 1.132 filed 12/4/2009 is insufficient to overcome the rejection of claim 1 based upon Garcera in view of Childs and further in view of Grangeon as set forth in the last Office action because:

The affidavit establishes that Garcera's pore filling is for a pressure brake and Garcera has a separate filter layer for filtration while the pore filling of Childs is for filtration itself. Further, the affidavit argues that Childs is concerned with organic polymer/gel pore filling and is done for the purpose of filtration, not a pressure brake. Additionally, the membrane of Childs is planar and not used for cross flow filtration explicitly. Finally, it is argued that one of skill in the art would not look to Childs and that if one did, one would replace the pore filling of Garcera with the organics of Childs.

16. The Affidavit does not successfully rebut obviousness. First, the Childs reference was considered for looking at techniques of pore filling. Accordingly, one looking at Childs would appreciate that pore filling could occur from both the bottom (fluid first passes through the substrate in a similar manner to Garcera) and from the top (fluid passes through the pore filled space first). Second, Applicant has not established that the prior art references are non-analogous or that they are not combinable. The references are both related to pore filling, the mere fact that the pore filling is for a different purpose and a different task would not result in one of ordinary skill in the art dismissing the reference. By reversing the pore filling of Garcera as modified in the 103 rejection, the ordinary artisan maintains the pressure brake capability (Applicant provides no evidence that the reference is destroyed) and further gains an addition

factor of separation since the pores closest to the separator layer are now partially filled. Additionally, the Affidavit argues bodily incorporation of the Childs gel into the Garcera system. However, Applicant provides no justification for this combination. Further, one of skill in the art would recognize that this is an unnecessary combination. The ceramic filling of Garcera is preferable for ease of manufacture.

In response to applicant's argument that Childs and Garcera are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both references are concerned with membrane substrate pore filling techniques.

In response to applicant's argument that combining Childs and Garcera would result in gel filled pores, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Response to Arguments

17. Applicant's arguments filed 12/4/2009 have been fully considered but they are not persuasive.

Applicant's arguments are addressed towards continued discussion of the Affidavit of Grangeon. Accordingly, these arguments have already been addressed above and are not found to be convincing.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID C. MELLON whose telephone number is (571)270-7074. The examiner can normally be reached on Monday through Thursday 9:00am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Tony G Soohoo/
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